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***Sunagocia*, a Replacement Name for the Platycephalid Genus *Eurycephalus* (Actinopterygii: Percomorpha), with Taxonomic Comments on the Species of the Genus**

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The genus *Sunagocia* is established as a replacement name for the platycephalid fish genus *Eurycephalus* Imamura, 1996, which is preoccupied by the cerambycid beetle genus *Eurycephalus* Gray in Cuvier and Griffith, 1832. The genus currently contains three valid species: *S. arenicola* (Schultz, 1966), comb. nov., *S. carbunculus* (Valenciennes in Cuvier and Valenciennes, 1833), comb. nov., and *S. otaitensis* (Cuvier in Cuvier and Valenciennes, 1829), comb. nov. It is confirmed that Cuvier satisfied the nomenclatural requirements for availability of this last species, although several investigators have attributed the name to Parkinson, who made the unpublished drawing of *S. otaitensis* used in its original description and named the species. Two measurements, of head length and especially interorbital width, are helpful in distinguishing *S. carbunculus*, *S. arenicola*, and *S. otaitensis* from each other.

Key Words: *Sunagocia*, *Eurycephalus*, replacement name, *Sunagocia arenicola*, *Sunagocia carbunculus*, *Sunagocia otaitensis*.

Introduction

Imamura (1996) cladistically inferred the phylogenetic relationships of 38 species of the family Platycephalidae using morphological characters. Based on the relationships, he classified the family into two subfamilies and 17 genera, including three newly established genera (*Ambiserrula*, *Eurycephalus*, and *Solitas*). One of them has proven to be preoccupied by the cerambycid beetle genus *Eurycephalus* Gray in Cuvier and Griffith, 1832 (q.v.) (Y. Hirashima, personal communication 2002). Here, a replacement name for *Eurycephalus* Imamura, 1996 is established, and additional taxonomic information on the species of this genus is also given.

Measurements and counts were made according to Hubbs and Lagler (1958), and were routinely taken from the left side. Specimen lengths are expressed as standard length (SL). Measurements were made with calipers to the nearest 0.1 mm. Institutional acronyms follow Leviton *et al.* (1985).

Taxonomic Account

Genus *Sunagocia* nom. nov.

(Japanese name: Sunagochi zoku)

(Figs 1, 2A)

Eurycephalus Imamura, 1996: 210, fig. 70 (type species: *Thysanophrys arenicola* Schultz, 1966, by original designation), preoccupied by *Eurycephalus* Gray in Cuvier and Griffith, 1832: 119 (Insecta: Cerambycidae).

Etymology. The name *Sunagocia* is derived from Japanese name of its type species, *Thysanophrys arenicola* (“sunagochi” in Japanese, meaning sand flat-head), and from a root found in the names of some other platycephalid genera [*Inegocia* Jordan and Thompson, 1913 (may be derived from Japanese “inegochi”) and *Onigocia* Jordan and Thompson, 1913 (from “onigochi”)]. The gender is feminine.

Diagnosis. Lateral line scales fewer than 60 (usually 50–55); number of scale rows slanting downward and backward above lateral line scales about equal to number of lateral line scales; gill rakers on first gill arch usually fewer than seven; dorsal surface of head with spines, but lacking tubercles; suborbital ridge usually with four or more distinct spines (fewer than four in young specimens, in which spines inferred to be not fully developed); lateral line scales with two exterior openings posteriorly; iris lappet well or weakly branched; sensory tubes on cheek region weakly developed, only partially covering this region.

Remarks. *Sunagocia* currently includes the following three valid species: *S. otaitensis* (Cuvier in Cuvier and Valenciennes, 1829), **comb. nov.** (see below for authorship); *S. carbunculus* (Valenciennes in Cuvier and Valenciennes, 1833), **comb. nov.**; and *S. arenicola* (Schultz, 1966), **comb. nov.** (see also Imamura 1996) (Fig. 1). The availability of *C. otaitensis* was shown by Imamura *et al.* (1995). These species were previously placed in the genus *Thysanophrys* Ogilby, 1898, because they possessed the following characters: iris lappet finger-like or branched; number of scale rows slanting downward and backward above lateral line scales about equal to number of lateral line scales; gill rakers on first gill arch usually fewer than seven; and suborbital ridge usually with four or more distinct spines (e.g., Knapp 1984, 1986; Imamura *et al.* 1995). Imamura (1996) removed these three species from *Thysanophrys* and included them in the newly established genus *Eurycephalus*, because the clade including *T. arenicola* and *T. otaitensis* and that containing *T. cirronasa* (Richardson, 1848) (=type species of *Thysanophrys*), *T. chiltonae* Schultz, 1966, and *T. armata* (Fowler, 1938) together are not monophyletic.

The members of *Sunagocia* are easily separable from those of *Thysanophrys* in having the sensory tubes from the infraorbitals and preopercle in the cheek region weakly developed, only partially covering the region (Imamura 1996) (Fig. 2).

Taxonomic comments on *Sunagocia* species. Several investigators have attributed the name *Sunagocia otaitensis* to Sydney Parkinson (e.g., Knapp 1986, 1999; Imamura *et al.* 1995; Imamura 1996), who illustrated the animals, including *S. otaitensis*, from James Cook's voyage on the Endeavour (see Wheeler 1986). Although Parkinson named the species as *Cottus otaitensis* according to Cuvier in Cuvier and Valenciennes (1829), Cuvier in Cuvier and Valenciennes (1829) originally described it based on the unpublished drawing by Parkinson (see Imamura *et al.* 1995, fig. 5). Parkinson was responsible for the name, but not for the description;

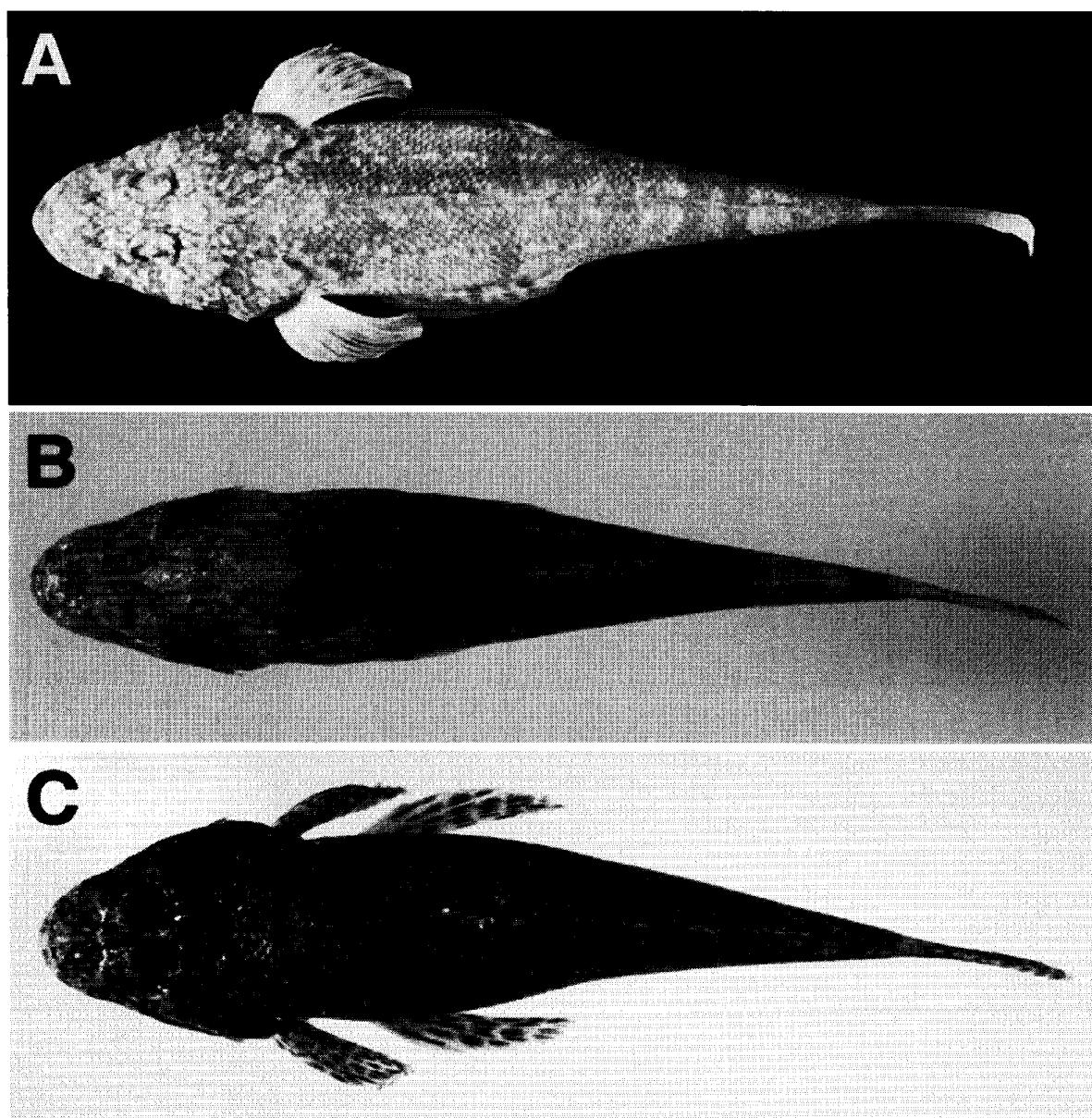


Fig. 1. Dorsal views of three species of *Sunagocia*. A, *S. arenicola* (WAM P. 29642-017, 150 mm); B, *S. carbunculus* (MNHM 6875, 128 mm, holotype); C, *S. otaitensis* (NSMT-P 46965, 146 mm).

thus, he did not satisfy a criterion of availability (International Commission on Zoological Nomenclature 1999, Art. 12.1). Judging from the International Code of Zoological Nomenclature, Art. 50.1.1 (International Commission on Zoological Nomenclature 1999), *C. otaitensis* is to be attributed to Cuvier, as cited by Eschmeyer *et al.* (1998) and Imamura and Knapp (1999), although these authors did not provide precise reasons for this attribution.

Sunagocia carbunculus can be easily distinguished from *S. arenicola* and *S. otaitensis* in having a characteristic series of papillae on the upper margin of the eye (e.g., Knapp and Imamura 1997; Knapp 1999). A row of papillae on the lips of *S.*

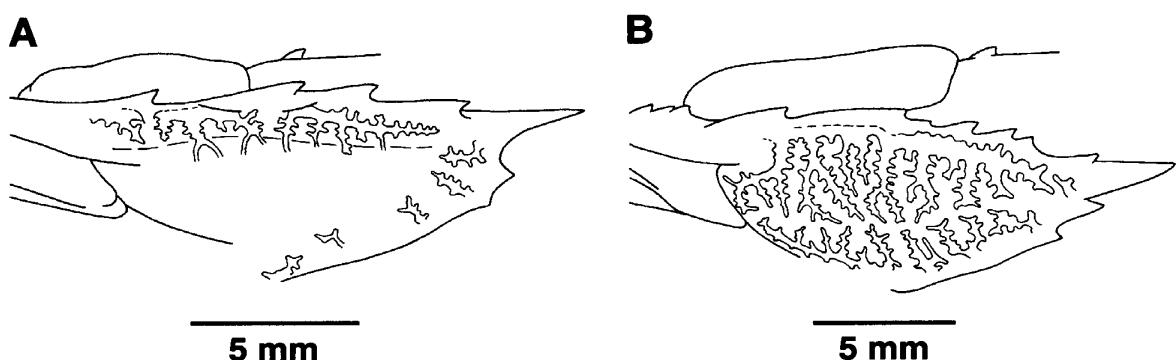


Fig. 2. Ventral view of cheek region on left side, showing condition of skinny sensory tubes in this region. A, *Sunagocia otaitensis* (WAM P. 27824-080, 89 mm); B, *Thysanophrys celebica* (Bleeker, 1854) (HUMZ 13511, 94 mm).

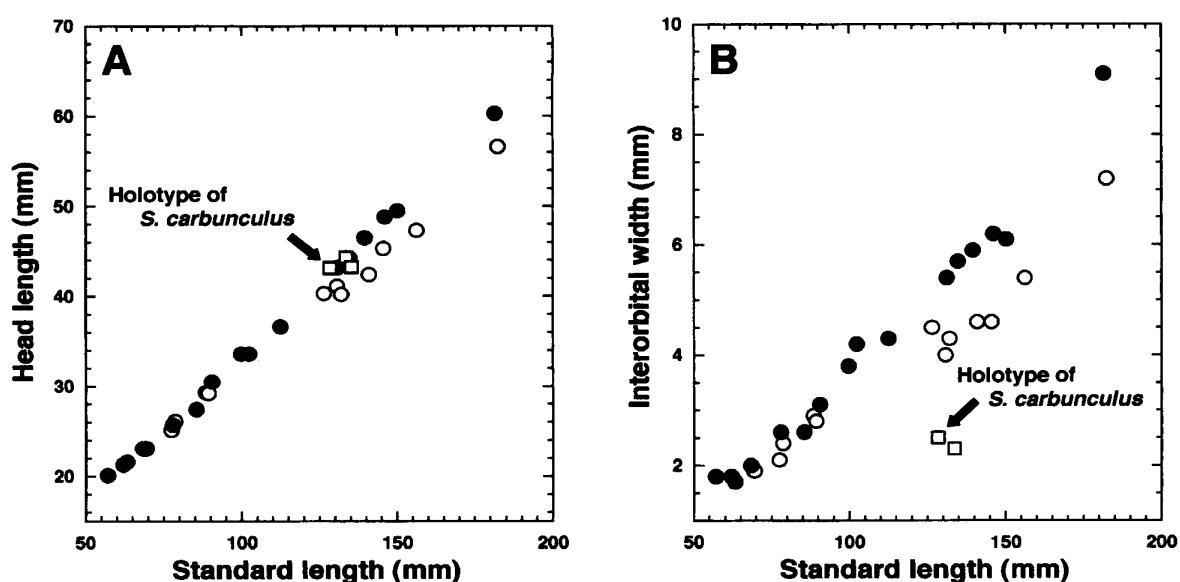


Fig. 3. Relationships of head length (A) and interorbital width (B) versus standard length in three species of *Sunagocia*. Solid circle, *S. arenicola*; open square, *S. carbunculus*; open circle, *S. otaitensis*.

otaitensis is a valuable character for separating it from its congeners (e.g., Knapp 1984, 1986, 1999; Imamura *et al.* 1995). Imamura *et al.* (1995) demonstrated that *S. arenicola* and *S. otaitensis* are also separable by head length (HL) and interorbital width: *S. arenicola* has a larger head and broader interorbit than *S. otaitensis* at comparable sizes in specimens of more than ca. 12 cm SL, although overlaps in the ranges of both measures occur between them (HL 32.1–35.2% SL and interorbital width 7.9–15.1% HL in *S. arenicola* vs. 30.1–33.3% SL and 8.2–12.7% HL, respectively, in *S. otaitensis*) (Fig. 3). Further comparisons of these proportions among the three species of *Sunagocia* here reveal that *S. carbunculus* has a slightly larger head than *S. otaitensis* and a considerably narrower interorbit than *S. arenicola* and *S. otaitensis* at comparable sizes (HL 31.9–33.6% SL and interorbital width 5.2–5.8% HL in *S. carbunculus*) (Fig. 3). Therefore, these proportional characters,

especially interorbital width, are also helpful in distinguishing *S. carbunculus* from *S. arenicola* and *S. otaitensis*, as well as separating the latter two species from each other.

Materials examined. *Sunagocia arenicola* (16 specimens): HUMZ 135114–135117, 135119–135122 (8, 57–182 mm); WAM P. 28538-013 (2, 102–131 mm); WAM P. 28541-026 (113 mm); WAM P. 29642-017 (2, 57–150 mm); WAM P. 30366-002 (2, 91–100 mm); WAM P. 30622-005 (78 mm). *Sunagocia carbunculus* (3 specimens): BMNH 1860.3.19.268 (lectotype of *Platycephalus cantori* Bleeker, 1879, 137 mm, dry specimen); BMNH 1860.3.19.269 (paralectotype of *P. cantori*, 135 mm, dry specimen); MNHN 6875 (holotype, 156 mm). *Sunagocia otaitensis* (12 specimens): BMNH 1876.6.5.1 (holotype of *Platycephalus variolosus* Günther, 1876, 132 mm); RMNH 5968 (holotype of *Platycephalus malayanus* Bleeker, 1853, 77 mm); NSMT-P 46965 (2, 146–182 mm); NSMT-P 46966 (2, 141–156 mm); NSMT-P 46967 (131 mm); WAM P. 27824-080 (5, 69–126 mm).

Comparative materials. *Thysanophrys armata* (1 specimen): HUMZ 135112 (121 mm). *Thysanophrys celebica* (1 specimen): HUMZ 135111 (94 mm). *Thysanophrys chiltonae* (4 specimens): NSMT-P 35570 (175 mm); NSMT-P 46967 (2, 132–153 mm); WAM P. 27824-080 (76 mm). *Thysanophrys cirronasa* (1 specimen): CSIRO CA 3693 (182 mm).

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References

Cuvier, G. 1829. Des Platycéphales (*Platycephalus*, Bl.). Pp. 226–263, pl. 82. In: Cuvier, G. and Valenciennes, A. *Histoire Naturelle des Poissons*. Vol. 4. F. G. Levault, Paris-Strasbourg, xxvi+2+518 pp.

Cuvier, G. and Griffith, E. 1832. *The Animal Kingdom, Arranged in Conformity with its Organization*, Vol. 15, *Insecta* 2. Whittaker, London, 796 pp.

Eschmeyer, W. N., Ferraris, C. J. Jr., Hoang, M. D. and Long, D. J. 1998. Part I. Species of fishes. Pp. 25–1820. In: Eschmeyer, W. N. (Ed.) *Catalog of Fishes*. Vols 1–3. California Academy of Sciences, San Francisco, 2905 pp.

Hubbs, C. L. and Lagler, K. F. 1958. Fishes of the Great Lakes region. Bulletin of Cranbrook Institute of Science 26: 1–213, 44 pls.

Imamura, H. 1996. Phylogeny of the family Platycephalidae and related taxa (Pisces: Scorpaeniformes). Species Diversity 1: 123–233.

Imamura, H., Ida, H. and Moyer, J. T. 1995. Redescription of a flathead, *Thysanophrys otaitensis* (Scorpaeniformes: Platycephalidae). Japanese Journal of Ichthyology 42: 277–283.

Imamura, H. and Knapp, L. W. 1999. *Thysanophrys papillaris*, a new species of flathead from

the Andaman Sea and northern Australia. *Ichthyological Research* 46: 179–183.

International Commission on Zoological Nomenclature. 1999. *International Code of Zoological Nomenclature*. Fourth edition. International Trust for Zoological Nomenclature, London, xxix+306 pp.

Knapp, L. W. 1984. Platycephalidae. 22 pp. In: Fisher, G. and Bianchi, G. (Eds) *FAO Species Identification Sheets for Fisheries Purposes. Western Indian Ocean (Fishing Area 51)*. Vol. 3. FAO, Rome. [No pagination]

Knapp, L. W. 1986. Family No. 155: Platycephalidae. Pp. 482–486. In: Smith, M. M. and Heemstra, P. C. (Eds) *Smiths' Sea Fishes*. Springer-Verlag, Berlin, xx+1047 pp.

Knapp, L. W. 1999. Platycephalidae. Pp. 2385–2421. In: Carpenter, K. E. and Niem, V. H. (Eds) *FAO Species Identification Guide for Fishery Purposes. The Living Marine Resources of the Western Central Pacific*. Vol. 4. *Bony Fish Part 2 (Mugilidae to Carangidae)*. FAO, Rome, pp. i–v+2069–2790, 7 pls.

Knapp, L. W. and Imamura, H. 1997. Status of *Platycephalus cantori* Bleeker, 1879 (Teleostei: Platycephalidae). *Proceedings of the Biological Society of Washington* 110: 384–387.

Leviton, A. E., Gibbs, R. H. Jr., Heal, E. and Dawson, C. E. 1985. Standards in herpetology and ichthyology: Part I. Standard symbolic codes for institutional resource collections in herpetology and ichthyology. *Copeia*, Gainesville 1985: 802–832.

Wheeler, A. 1986. Catalogue of the natural history drawings commissioned by Joseph Banks on the Endeavour voyage 1768–1771 held in the British Museum (Natural History). *Bulletin of the British Museum (Natural History)*, Historical Series 13: 1–172.